

Claims

- [c1] 1. A bicycle power supply apparatus comprising:
a battery unit;
a bicycle condition detecting unit that detects when a bicycle is in a selected condition that ordinarily does not require drawing current from the battery unit for powering a current drawing element; and
a current drawing unit that causes current to be drawn from the battery unit when the bicycle condition detecting unit detects the selected condition.
- [c2] 2. The apparatus according to claim 1 wherein the selected condition is a stopped condition of the bicycle.
- [c3] 3. The apparatus according to claim 2 wherein the selected condition is a stopped condition of the bicycle for a predetermined time interval.
- [c4] 4. The apparatus according to claim 1 further comprising a voltage sensor operatively coupled to the battery unit and to the current drawing unit to provide voltage information to the current drawing unit.
- [c5] 5. The apparatus according to claim 4 wherein the current drawing unit causes current to be drawn from the

battery unit when the bicycle condition detecting unit detects the selected condition until the voltage sensor senses a predetermined voltage.

- [c6] 6. The apparatus according to claim 1 wherein the current drawing unit turns on a display powered by the battery unit to draw current from the battery unit.
- [c7] 7. The apparatus according to claim 1 wherein the current drawing unit turns on a motor driver powered by the battery unit to draw current from the battery unit.
- [c8] 8. The apparatus according to claim 1 wherein the battery unit is structured to be charged from a power supply adapted to be mounted to the bicycle.
- [c9] 9. The apparatus according to claim 8 wherein the battery unit is structured to be charged from an alternating current generator.
- [c10] 10. The apparatus according to claim 8 wherein the battery unit is structured to be charged from a separate battery.
- [c11] 11. The apparatus according to claim 8 further comprising an input switch coupled to a first battery terminal of the battery unit to communicate current from the power supply to the battery unit, wherein the current drawing

unit opens the input switch when the bicycle condition detecting unit detects the selected condition.

- [c12] 12. The apparatus according to claim 11 wherein the battery unit has a second battery terminal coupled to a ground potential.
- [c13] 13. The apparatus according to claim 8 further comprising a current flowing device coupled to a first battery terminal of the battery unit to flow current away from the first battery terminal.
- [c14] 14. The apparatus according to claim 13 wherein the current flowing device comprises a resistance having a first resistance terminal coupled to the first battery terminal.
- [c15] 15. The apparatus according to claim 14 wherein the battery unit has a second battery terminal coupled to a ground potential, and wherein the resistance has a second resistance terminal coupled to the ground potential.
- [c16] 16. The apparatus according to claim 13 wherein the current flowing device comprises a switch coupled to the first battery terminal.
- [c17] 17. The apparatus according to claim 16 wherein the current drawing unit closes the switch when the bicycle

condition detecting unit detects the selected condition.

- [c18] 18. The apparatus according to claim 17 further comprising a resistance coupled in series with the switch.
- [c19] 19. The apparatus according to claim 18 wherein the battery unit has a second battery terminal coupled to a ground potential, and wherein the resistance is coupled in series between the switch and the ground potential.
- [c20] 20. The apparatus according to claim 17 further comprising an input switch coupled to the first battery terminal to communicate current from the power supply to the battery unit, wherein the current drawing unit opens the input switch when the bicycle condition detecting unit detects the selected condition.